

REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Office Action dated June 29, 2007 and the Advisory Action dated October 15, 2007. In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

Claims 1-24 and 29 are under consideration in this application. Claim 1 is being amended, as set forth above and in the attached marked-up presentation of the claim amendments, in order to more particularly define and distinctly claim Applicants' invention. A new claim 29 is being added. All the amendments to the claims are supported by the specification. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

Prior Art Rejections

Under 35 U.S.C. §103(a), claims 1-4, 6-7, 9, 12-15, 17-18, 20 and 23-24 were rejected as being unpatentable over US Publication No. 2003/0067424 to Akimoto et al. (hereinafter "Akimoto '424") in view of US Patent No. 5,302,966 to Stewart (hereinafter "Stewart"); claims 5, 8, 16 and 19 were rejected over Akimoto '424 in view of Stewart and US Patent No. 5,250,931 to Misawa et al. (hereinafter "Misawa"); claims 10 and 21 were rejected over Akimoto '424 in view of Stewart and US Patent No. 6,670,936 to Akimoto et al. (hereinafter "Akimoto '936"); and claims 11 and 22 were rejected over Akimoto '424 in view of Stewart and US Patent No. 6,812,912 to Miyajima et al. (hereinafter "Miyajima"). These rejections have been carefully considered, but are most respectfully traversed.

The image display device of the present invention (for example, the embodiment depicted in Figs. 1-4), as now recited in claim 1, comprises: a display part 20 configured by a plurality of pixels 10 each having an electro-luminescent element 1 driven to illuminate according to a display signal voltage V_s ; a signal line 8 used to write said display signal voltage in said pixel 10; a pixel selector 15 for selecting a pixel from said plurality of pixels so as to write said display signal voltage V_s therein through said signal line 8; a display signal voltage generator 16 for generating said display signal voltage V_s ; an illuminating state controller for controlling a selection of an illuminating state or a non-illuminating state for each of said plurality of pixels at a time; and a constant voltage supply for supplying a

constant voltage V_{il} to each of said plurality of pixels through said signal line 8 when said illuminating state is selected for said selected pixel. One end of said electro-luminescent element 1 provided in each said pixel 10 is connected to a common power supply while the other end of said electro-luminescent element 1 is selectively connected to a first source/drain electrode of an electro-luminescent element driving transistor 2 through a first switch 7, said transistor 2 has a threshold voltage V_{th} , a second source/drain electrode of said electro-luminescent element driving transistor 2 is connected to a power supply line 9 applied with said common supply voltage, and the gate of said electro-luminescent element driving transistor 2 is connected to the signal line 8 through a capacitance 4 and selectively connected to the first source/drain electrode of said electro-luminescent element driving transistor 2 through a second switch 6 (claim 2; Fig. 2). When said illuminating state is selected, the first switch 7 is fixed as ON, the second switch 6 is fixed at OFF, and the constant voltage V_{il} is applied to the signal line 8 such that a voltage that is lower than said common supply voltage (e.g., by $(V_s - V_{il} + |V_{th}|)$; claim 29) appears at the gate of said transistor 2 (Fig. 3; p. 13, line 15 to p. 14, line 24).

As recited in claim 13, one end of the signal line 8 is connected to the display signal voltage generator 16 through a third switch 17 (Fig. 7).

Applicants contend that none of the cited prior art references teaches or suggests “supplying a constant voltage to each of said plurality of pixels through said signal line 8 when said illuminating state is selected for said selected pixel,” that “one end of said electro-luminescent element 1 provided in said each pixel 10 is connected to a common power supply while the other end of said electro-luminescent element 1 is selectively connected to a first source/drain electrode of an electro-luminescent element driving transistor 2 through a first switch 7, a second source/drain electrode of said electro-luminescent element driving transistor 2 is connected to a power supply line 9 applied with said common supply voltage, and the gate of said electro-luminescent element driving transistor 2 is connected to the signal line 8 through a capacitance 4 and selectively connected to the first source/drain electrode of said electro-luminescent element driving transistor 2 through a second switch 6”, and that “when said illuminating state is selected, the first switch 7 is fixed as ON, the second switch 6 is fixed at OFF, and the constant voltage V_{il} is applied to the signal line 8 such that a voltage that is lower than said common supply voltage (such as by $(V_s - V_{il} + |V_{th}|)$; claim 29) appears at the gate of said transistor 2”, as according to the invention.

As admitted by the Examiner (p. 6, 2nd to last paragraph of the outstanding Office Action), Akimoto does not expressly disclose supplying a constant voltage to each pixel

during the illuminating state. Stewart was relied upon by the Examiner to provide such teachings. In particular, the Examiner (p. 6, last paragraph of the outstanding Office Action) asserted that an image display device having an electro-luminescent element pixel circuit (42 in Fig. 2a), wherein a constant voltage supply (64, 62 in Fig. 2a) provides a constant voltage to the pixel through a signal line (48 in Fig. 2a) when said illuminating state is selected for said selected pixel (col. 3, lines 32-34).

However, Stewart's data line 48 functions as a signal line transporting signals only during the period of LOAD, but functions as an electricity line supplying electric power during the ILLUMINATE period. As such, Stewart's data line 48 does not supply a constant voltage to each pixel during the illuminating state as the signal line 8 of the present invention.

Although Stewart discloses in col. 3, lines 32-34 that the low impedance buffer 64 holds the voltage on the data line 48 at its nominal value during the ILLUMINATE period, the actual operation of Stewart's embodiment depicted Fig. 2a and its relevant lengthy description in the patent (col. 3, lines 17-25) prove otherwise.

When checking the flow of a luminous electric current when the illuminating state is selected for the selected pixel in Akimoto (Fig. 1), the luminous electric current runs from a common cathode to the sources of electricity line 18 by way of the illuminating body 7, the transistor 9 and the transistor 4. While in the present application (e.g., Fig. 2), the luminous electric current runs from a common cathode to the sources of electricity line 9 by way of the illuminating body 1, the switch 7, and the transistor 2. Next, during the ILLUMINATE period of Stewart's embodiment of Fig. 2a, the luminous electric current runs from a source of electricity 59 to a data line 48, a buffer amplifier 64 by way of a connecting point 58, an illuminating body 54 and a transistor 50. That is, Stewart's data line 48 supplies electric power during the ILLUMINATE period. To reduce the number of components, Stewart has the line 48 function as a signal line during the period of LOAD, and as an electricity line during the ILLUMINATE period.

Stewart's data line 48 in Fig. 2a holds, of course, the voltage at its nominal value when being an electricity line; however, it is during the LOAD period, but not during ILLUMINATE period as described in col. 3, lines 32-34. This is no different from giving an established voltage to sources as Akimoto's electricity line 18 or the electricity line 9 in the present application.

Stewart simply does NOT operate such that "when said illuminating state is selected, the first switch is fixed as ON, the second switch is fixed at OFF, and the constant voltage is applied to the signal line such that a voltage that is lower than said common supply voltage

(such as by $(V_s - V_{il} + |V_{th}|)$) appears at the gate of said transistor" as does the present invention.

Applicants contend that neither Akimoto, Stewart, nor their combination teaches or suggests each and every feature of the present invention as disclosed in independent claim 1. As such, the present invention as now claimed is distinguishable and thereby allowable over the rejections raised in the Office Action. The withdrawal of the outstanding prior art rejections is in order, and is respectfully solicited.

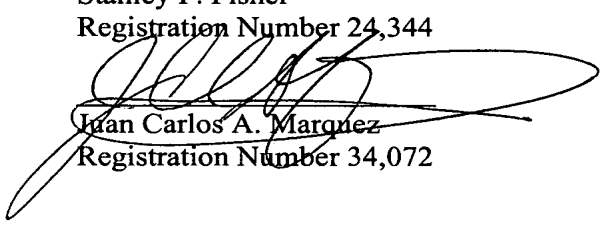
Conclusion

In view of all the above, clear and distinct differences as discussed exist between the present invention as now claimed and the prior art reference upon which the rejections in the Office Action rely, Applicants respectfully contend that the prior art references cannot anticipate the present invention or render the present invention obvious. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicants' undersigned representative at the address and phone number indicated below.

Respectfully submitted,

Stanley P. Fisher
Registration Number 24,344



Juan Carlos A. Marquez
Registration Number 34,072

REED SMITH LLP
3110 Fairview Park Drive, Suite 1400
Falls Church, Virginia 22042
(703) 641-4200

October 29, 2007

SPF/JCM/JT